

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for providing a user with traffic information, comprising the steps of:

a) each of a plurality of vehicles broadcasting their-a registration messagesmessage requesting its registration;

b) each of the plurality of vehicles receiving registration messages broadcast by other vehicles and registering the other vehicles which broadcast the received registration messages to a node management table to create creating-an ad-hoc network between vehicles-on-the-basis-of registration messages broadcast by the vehicles;

c) at least one Road Side Equipment (RSE) receiving the registration messages broadcast by the plurality of vehicles, and collecting traffic information included in the received registration messages; and

d) the RSE transmitting the collected traffic information to a traffic information service center.

2. (Original) The method as set forth in claim 1, wherein the registration messages include vehicle motion information.

3. (Currently Amended) The method as set forth in claim 1, further comprising the steps of:

providing the RSE broadcasting IDentifier (ID) and position information of the RSE to the vehicles; and

each of the plurality of vehicles receiving registration messages broadcast by the RSE and registering the RSE to the node management table; and

enabling-the RSE participating in to-be-contained-in-the ad-hoc network between the vehicles.

4. (Currently Amended) The method as set forth in claim 3, further including the steps of:

b1) the vehicles broadcasting warning messages over the ad-hoc network; and

b2) the RSE receiving the broadcast warning messages and collecting traffic information included in the received warning messages.

5. (Currently Amended) The method as set forth in claim 3, further comprising the steps of:

e) a the traffic information service center transferring the traffic information received from the RSE to ~~other-another RSE~~RSEs; and

f) the ~~other-another RSEs~~RSE transferring the traffic information to nearby vehicles over the ad-hoc network in which the another RSE participates.

6. (Currently Amended) A method for at least one Road Side Equipment (RSE) ~~creating to create an~~ ad-hoc network between the RSE and a plurality of vehicles ~~to collect for collecting~~ traffic information, comprising the steps of:

a) from each of the plurality of vehicles~~vehicles broadcasting their registration messages, and receiving the a registration messages-message requesting its registration at the RSE;~~

b) registering the received registration messages-message to a first node management table of the RSE and creating the ad-hoc network between the RSE and the vehicles; and

c) collecting traffic information from the registration messages and transferring the collected traffic information to ~~the a~~a traffic information service center.

7. (Original) The method as set forth in claim 6, wherein the registration messages include vehicle motion information.

8. (Currently Amended) The method as set forth in claim 6, wherein the step (b) includes the steps of:

b1) ~~the RSE~~ broadcasting ~~a the~~ registration message having IDentifier (ID) and position information ~~of the RSE~~ to the vehicles; and

b2) each of the vehicles registering the registration message ~~received-broadcast~~ from the RSE to ~~their a~~a second node management table of each vehicle.

9. (Currently Amended) The method as set forth in claim 6, further comprising the steps of:

- d) ~~the RSE~~ receiving warning messages broadcast from the vehicles over the ad-hoc network;
- e) ~~the RSE~~ transferring the received warning message to the traffic information service center.

10. (Currently Amended) A method for providing a user with traffic information, comprising the steps of:

- a) each of a plurality of vehicles broadcasting their a registration messagesmessage requesting its registration to form an ad-hoc network;
- b) a Road Side Equipment the (RSE) receiving the broadcast registration messages and registering the vehicles which broadcast the registration messages to a first node management table of the RSE to form forming an the ad-hoc network associated with the vehicles on the basis of the registration messages; and
- c) the RSE receiving traffic information from a traffic information service center and transferring the traffic information to the registered vehicles contained in through the ad-hoc network.

11. (Currently Amended) The method as set forth in claim 10, wherein each of the registration messages ~~include~~ includes vehicle motion information.

12. (Currently Amended) The method as set forth in claim 10, wherein the step (b) includes the steps of:

- b1) the RSE broadcasting a registration message ~~of requesting its registration the RSE to~~ the vehicles; and
- b2) each of the vehicles receiving the registration message ~~of broadcast from~~ the RSE and registering the RSE to a second node management table of each vehicle.

13. (Currently Amended) An apparatus for providing a user with traffic information, comprising:

~~each of a plurality of vehicles broadcasting their a registration messages-message requesting its registration and receiving registration messages broadcast by other vehicles to and creating-create an the ad-hoc network-on the basis of the registration messages;~~

at least one Road Side Equipment (RSE) for receiving the registration ~~messages-message~~ broadcast from each of the vehicles, registering the vehicles which broadcast registration messages to a node management table of the RSE, and collecting traffic information from the received registration messages; and

a traffic information service center for receiving the traffic information from the ~~RSE~~RSEs.

14. (Currently Amended) The apparatus as set forth in claim 13, wherein the RSE broadcasts a registration message having ~~its own~~ position information of the RSE to the vehicles and participates in the ad-hoc network.

15. (Currently Amended) A Road Side Equipment (RSE) apparatus for collecting traffic information from a plurality of vehicles, and transferring the collected traffic information to ~~the a~~ traffic information service center ~~in a system for providing a user with traffic information,~~ said RSE apparatus comprising:

a Radio Frequency (RF) unit for receiving registration messages broadcast from the vehicles and broadcasting a registration message ~~of from~~ the RSE to the plurality of the vehicles;

a controller for registering the plurality of the vehicles to a node management table of the RSE by using the received registration messages to creating-create an ad-hoc network associated with the vehicles ~~on the basis of the registration messages of the vehicles and~~ generating traffic information ~~from by using~~ the registration messages; and

a communication interface for transferring the generated traffic information to the traffic information service center.

16. (Cancelled)

17. (Currently Amended) The apparatus as set forth in claim 15, wherein the RF unit receives warning messages broadcast from the vehicles over the ad-hoc network, and the controller creates the traffic information by ~~referring to~~ using the received warning messages.

18. (Currently Amended) The apparatus as set forth in claim 17, wherein the communication interface receives traffic information from the traffic information service center, and the controller transfers the received traffic information ~~received from the traffic information service center to~~ the vehicles ~~contained~~ through in the ad-hoc network.

19. (Currently Amended) The apparatus as set forth in claim 15, further comprising:
a position information receiver for detecting position and time information of the RSE apparatus.

20-24. (Cancelled)